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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Bernard Moss et al.                      Art Unit : 1645  
Serial No. : 10/646,628                                  Examiner : R. Zeman  
Filed : August 22, 2003  
Title : MVA EXPRESSING MODIFIED HIV ENVELOPE, GAG, AND POL GENES

**MAIL STOP AMENDMENT**

Commissioner for Patents  
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Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Applicants request consideration of the references listed on the attached PTO-1449 form. Under 37 C.F.R. § 1.98 (a)(2)(ii), only copies of foreign patent documents and/or non-patent literature are enclosed. Copies of any listed U.S. patents or U.S. patent application publications can be provided upon request.

This statement is being filed before receipt of a first office action. Please apply any charges or credits to Deposit Account No. 06-1050, referring to attorney docket 12804-027001.

Respectfully submitted,

Date: \_\_\_\_\_

27 July 2005

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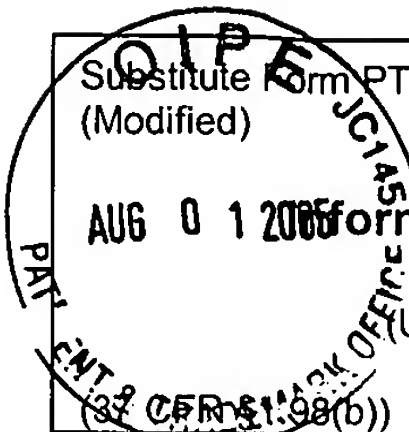
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Carrie A. Amonte

Typed or Printed Name of Person Signing Certificate

Carrie A. Amonte

 Substitute Form PTO-1449 (Modified) <b>Information Disclosure Statement</b> <b>by Applicant</b> (Use several sheets if necessary)	U.S. Department of Commerce Patent and Trademark Office		Attorney's Docket No. 12804-027001	Application No. 10/646,628
	Applicant Bernard Moss et al.			
	Filing Date August 22, 2003		Group Art Unit 1645	

U.S. Patent Documents							
Exami ner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
	AA	5,169,763	12/1992	Kieny <i>et al.</i>			
	AB	5,256,767	10/1993	Salk and Carlo			
	AC	5,445,953	08/1995	Dorner <i>et al.</i>			
	AD	5,494,807	02/1996	Paoletti <i>et al.</i>			
	AE	5,589,466	12/1996	Felgner <i>et al.</i>			
	AF	5,593,972	01/1997 03/1999	Weiner <i>et al.</i>			
	AG	5,614,404	03/1997	Mazzara <i>et al.</i>			
	AH	5,676,950	10/1997	Small <i>et al.</i>			
	AI	5,736,368	04/1998	Mazzara <i>et al.</i>	435	320.1	
	AJ	5,741,492	04/1998	Hurwitz and Owens			
	AK	5,747,324	05/1998	Mazzara <i>et al.</i>			
	AL	5,747,338	05/1998	Giese and Escobedo			
	AM	5,756,103	05/1998	Paoletti <i>et al.</i>	424	160.1	
	AN	5,766,599	06/1998	Paoletti <i>et al.</i>	435	5	
	AO	5,817,637	10/1998	Weiner <i>et al.</i>	435	456	
	AP	5,846,946	12/1998	Huebner <i>et al.</i>	514	44	
	AQ	5,853,725	12/1998	Salk and Carlo	424	208.1	
	AR	5,858,775	1/1999	Johnson, Phillip R.	435	320.1	
	AS	5,863,542	01/1999	Paoletti <i>et al.</i>			
	AT	5,879,925	03/1999	Rovinski <i>et al.</i>			
	AU	5,911,989	6/1999	Katinger <i>et al.</i>	424	160.1	
	AV	5,928,930	07/1999	Salk and Carlo			
	AW	5,985,641	11/1999	Haynes <i>et al.</i>			
	AX	6,051,410	04/2000	Mazzara <i>et al.</i>			
	AY	6,077,662	6/2000	Compans <i>et al.</i>	435	5	
	AZ	6,080,408	06/2000	Rovinski <i>et al.</i>			

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U.S. Patent Documents							
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	AAA	6,086,891	07/2000	Hurwitz and Coleclough			
	ABB	6,099,847	08/2000	Tobin and Gonda			
	ACC	6,103,244	08/2000	Dorner <i>et al.</i>			
	ADD	6,121,021	09/2000	Rovinski <i>et al.</i>			
	AEE	6,140,114	10/2000	Klatzmann and Salzmann			
	AFF	6,156,952	12/2000	Bryant <i>et al.</i>	800	11	
	AGG	6,171,596	01/2001	Earl <i>et al.</i>			
	AHH	6,201,663	04/2001	Ertl			
	AII	6,204,250	03/2001	Bot and Bona			
	AJJ	6,214,804	04/2001	Felgner <i>et al.</i>			
	AKK	6,265,183	07/2001	Dorner <i>et al.</i>			
	ALL	6,291,157	09/2001	Rovinski <i>et al.</i>			
	AMM	6,306,625	10/2001	Jacobs <i>et al.</i>			
	ANN	6,448,083	9/2002	Larocca <i>et al.</i>	435	456	
	AOO	6,554,527	4/2003	Rovinski <i>et al.</i>	424	208.1	

Foreign Patent Documents or Published Foreign Patent Applications								
Exami ner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation	
							Yes	No
	APP	WO 97/27311	7/1997	WIPO				
	AQQ	WO 98/56919	12/1998	PCT International				
	ARR	WO 00/00216	01/2000	PCT International				
	ASS	WO 01/02607	01/2001	PCT International				
	ATT	WO 01/52886	07/2001	PCT International				
	AUU	WO 01/82962	11/2001	PCT International				
	AVV	WO 02/072754	9/2002	WIPO				

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							Yes	No
	AWW	WO 03/004657	1/2003	WIPO				

Other Documents (include Author, Title, Date, and Place of Publication)		
Exami ner Initial	Desig. ID	Document
	AXX	Amara <i>et al.</i> , "Different Patterns of Immune Responses but Similar Control of a Simian-Human Immunodeficiency Virus 89.6P Mucosal Challenge by Modified Vaccinia Virus Ankara (MVA) and DNA/MVA Vaccines," <i>J. Virology</i> 76:7625-7631 (2002)
	AYY	Andre <i>et al.</i> , "Increased immune response elicited by DNA vaccination with a synthetic gp120 sequence with optimized codon usage," <i>J. Virol.</i> , 72: 1497-1503, 1998.
	AZZ	Antoine <i>et al.</i> , "The Complete Genomic Sequence of the Modified Vaccinia Ankara Strain: Comparison with Other Orthopoxviruses", <i>Virology</i> , 244: 365-96, 1998.
	AAAA	Asakura <i>et al.</i> , "Induction of HIV-1 specific mucosal immune responses by DNA vaccination," <i>Scand. J. Immunol.</i> , 46: 326-330, 1997.
	ABBB	Bachmann and Zinkernagel, "Neutralizing antiviral B cell responses," in <i>Ann. Rev. Immunol.</i> , 15: 235-270, 1997.
	ACCC	Barouch <i>et al.</i> , "Reduction of Simian-human immunodeficiency virus 89.6P viremia in rhesus monkeys by recombinant modified vaccinia virus Ankara vaccination," <i>J. Virol.</i> , 75: 5151-5158, 2001.
	ADDD	Barouch <i>et al.</i> , "Augmentation of immune responses to HIV-1 and simian immunodeficiency virus DNA vaccines by IL-2/IG plasmid administration in rhesus monkeys", <i>Proc. Natl. Acad. Sci. U.S.A.</i> , 97:4192-7, April 11, 2000.
	AEEE	Barry <i>et al.</i> , "Protection against mycoplasma infection using expression-library immunization," <i>Nature</i> , 377: 632-635, 1995.
	AFFF	Berger, "HIV Entry and Tropism: the chemokine receptor connection," <i>AIDS</i> , 11(Suppl. A): S3-16, 1997.
	AGGG	Benson <i>et al.</i> , <i>J. Virol.</i> , "Recombinant vaccine-induced protection against the highly pathogenic simian immunodeficiency virus SIV(mac251): dependence on route of challenge exposure," 72: 4170-4182, 1998.
	AHHH	Blanchard <i>et al.</i> , "Modified vaccinia virus Ankara undergoes limited replication in human cells and lacks several immunomodulatory proteins: implications for use as a human vaccine," <i>J. Gen. Virol.</i> , 79: 1159-1167, 1998.
	AIII	Bohm <i>et al.</i> , "DNA vector constructs that prime hepatitis B surface antigen-specific cytotoxic T lymphocyte and antibody responses in mice after intramuscular injection," <i>J. Immuno. Methods</i> , 193: 29-40, 1996.
	AJJJ	Bohm <i>et al.</i> , "Routes of plasmid DNA vaccination that prime murine humoral and cellular immune responses," <i>Vaccine</i> , 16: 949-54, 1998.
	AKKK	Bolivar <i>et al.</i> , "Construction and Characterization of New Cloning Vehicles: (II. A Multipurpose Cloning System)," <i>Gene</i> , 2: 95-113, 1977.

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	ALLL	Boyer <i>et al.</i> , "Protection of chimpanzees from high-dose heterologous HIV-1 challenge by DNA vaccination," <i>Nature Med.</i> , 3: 526-532, 1997.
	AMMM	Boyle <i>et al.</i> , "Influence of cellular location of expressed antigen on the efficacy of DNA vaccination: cytotoxic T lymphocyte and antibody responses are suboptimal when antigen is cytoplasmic after intramuscular DNA immunization," <i>Int. Immunol.</i> , 9: 1897-1906, 1997.
	ANNN	Boyle <i>et al.</i> , "Enhanced responses to a DNA vaccine encoding a fusion antigen that is directed to sites of immune induction," <i>Nature</i> , 392: 408-411, 1998.
	AOOO	Burton and Montefiori, "The antibody response in HIV-1 infection," <i>AIDS</i> , 11(Suppl A):S87-98, 1997.
	APPP	Burton <i>et al.</i> , "Why do we not have an HIV vaccine and how can we make one?" <i>Nature Med.</i> 4:495-498, 1998.
	AQQQ	Calarota <i>et al.</i> , "Cellular cytotoxic response induced by DNA vaccination in HIV-1-infected patients," <i>Lancet</i> , 351: 1320-1325, 1998.
	ARRR	Cardoso <i>et al.</i> , "Immunization with Plasmid DNA Encoding for the Measles Virus Hemagglutinin and Nucleoprotein Leads to Humoral and Cell-Mediated Immunity," <i>Virology</i> , 225: 293-299, 1998.
	ASSS	Carroll and Moss, "Host Range and Cytopathogenicity of the Highly Attenuated MVA Strain of Vaccinia Virus: Propagation and Generation of Recombinant Viruses in a Nonhuman Mammalian Cell Line", <i>Virology</i> , 238:198-211, 1997.
	ATTT	Chapman <i>et al.</i> , "Effect of intron A from human cytomegalovirus (Towne) immediate-early gene on heterologous expression in mammalian cells," <i>Nucl. Acids Res.</i> , 19: 3979-3986, 1991.
	AUUU	Chen <i>et al.</i> , "Protective Immunity Induced by Oral Immunization with a Rotavirus DNA Vaccine Encapsulated in Microparticles," <i>J. Virol.</i> , 72: 5757-5761, 1998.
	AVVV	Chun <i>et al.</i> , "Early establishment of a pool of latently infected, resting CD4+ T cells during primary HIV-1 infection," <i>Proc. Natl. Acad. Sci. USA</i> , 95: 8869-8873, 1998.
	AWWW	Collman <i>et al.</i> , "An Infection Molecular Clone of an Unusual Microphage-Tropic and Highly Cytopathic Strain of Human Immunodeficiency Virus Type 1," <i>J. Virol.</i> , 66: 7517-7521, 1992.
	AXXX	Condon <i>et al.</i> , "DNA-based immunization by in vivo transfection of dendritic cells," <i>Nat Med.</i> , 2:1122-1128, 1996.
	AYYY	Corr <i>et al.</i> , "Gene Vaccination with Naked Plasmid DNA: Mechanism of CTL Priming," <i>J. Exp. Med.</i> , 184: 1555-1560, 1996.
	AZZZ	Dempsey <i>et al.</i> , C3d of Complement as a Molecular Adjuvant: Bridging Innate and Acquired Immunity," <i>Science</i> , 271: 348-350, 1996.
	AAAAA	Durbin <i>et al.</i> , "Comparison of the immunogenicity and efficacy of a replication-defective vaccinia virus expressing antigens of human parainfluenza virus type 3 (HPIV3) with those of a live attenuated HPIV3 vaccine candidate in rhesus monkeys passively immunized with PIV3 antibodies," <i>J. Infect. Dis.</i> , 179: 1345-1351, 1999.
	ABBBB	Durbin <i>et al.</i> , "The immunogenicity and efficacy of intranasally or parenterally administered replication-deficient vaccinia-parainfluenza virus type 3 recombinants in rhesus monkeys", <i>Vaccine</i> , 16: 1324-30, 1998.
	ACCCC	Endo <i>et al.</i> , "Short- and Long-term Clinical Outcomes in Rhesus Monkeys Inoculated with a Highly Pathogenic Chimeric Simian/Human Immunodeficiency Virus", <i>J. Virol.</i> , 74:6935-45, 2000.

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(37 CFR §1.98(b))			

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	ADDDD	Esparza and Bhamarapravati, "Accelerating the development and future availability of JIV-1 vaccines: why, when, where, and how?", <i>Lancet</i> , 355: 2061-6, 2000.
	AEEEE	Evans DT <i>et al.</i> , "Virus-specific T-lymphocyte responses select for amino-acid variation in simian immunodeficiency virus Env and Nef," <i>Nat. Med.</i> , 5: 1270-1276, 1999.
	AFFFF	Feltquate <i>et al.</i> , "Different T Helper Cell Types and Antibody Isotypes Generated by Saline and Gene Gun DNA Immunization," <i>J. Immunol.</i> 158: 2278-2284, 1997.
	AGGGG	Feinberg et al., "AIDS vaccine models" Challenging challenge viruses" <i>Nature Med.</i> 8(3):207-210, 2002.
	AHHHH	Finzi <i>et al.</i> , "Latent infection of CD4 T cells provides a mechanism for lifelong persistence of HIV-1, even in patients on effective combination therapy", <i>Nat. Med.</i> 5: 1270-6, 1996.
	AIIII	Fomsgaard <i>et al.</i> , "Improved Humoral and Cellular Immune Responses Against the gp120 V3 Loop of HIV-1 Following Genetic Immunization with a Chimeric DNA Vaccine Encoding the V3 Inserted into the Hepatitis B Surface Antigen," <i>Scand. J. Immunol.</i> , 47: 289-295, 1998.
	AJJJJ	Fu <i>et al.</i> , "Priming of Cytotoxic T Lymphocytes by DNA Vaccines: Requirement for Professional Antigen Presenting Cells and Evidence for Antigen Transfer from Myocytes," <i>Mol. Med.</i> , 3: 362-371, 1997.
	AKKKK	Furci <i>et al.</i> , "Antigen-driven C-C Chemokine-mediated HIV-1 Suppression by CD4 T Cells from Exposed Uninfected Individuals Expressing the Wild-type CCR-5 Allele", <i>J. Exp. Med.</i> , 186:455-60, 1997.
	ALLLL	Fynan <i>et al.</i> , "DNA vaccines: Protective immunizations by parenteral, mucosal, and gene-gun inoculations," <i>Proc. Natl. Acad. Sci. USA</i> , 90: 11478-11482, 1993.
	AMMMM	Hakim <i>et al.</i> , "A Nine-Amino Acid Peptide from IL-1 $\beta$ Augments Antitumor Immune Responses Induced by Protein and DNA Vaccines," <i>J. Immunol.</i> , 157: 5503-5511, 1996.
	ANNNN	Hanke <i>et al.</i> , "DNA multi-CTL epitope vaccines for HIV and <i>Plasmodium faciparum</i> : immunogenicity in mice," <i>Vaccine</i> , 16: 426-435, 1998b.
	AOOOO	Hartikka <i>et al.</i> , "An Improved Plasmid DNA Expression Vector for Direct Injection into Skeletal Muscle," <i>Hum. Gen. Therapy</i> , 7: 1205-1217, 1996.
	APPPP	Hirsch <i>et al.</i> , "Prolonged Clinical Latency and Survival of Macaques Given a Whole Inactivated Simian Immunodeficiency Virus Vaccine", <i>J. Infect. Dis.</i> , 170:51-9, 1994.
	AQQQQ	Huang et al., "Human Immunodeficiency Virus Type 1-Specific Immunity..." <i>J. of Virology</i> 75:4947-4951, 2001.
	ARRRR	Inchauspe <i>et al.</i> , "Plasmid DNA Expressing a Secreted or a Nonsecreted Form of Hepatitis C Virus Nucleocapsid: Comparative Studies of Antibody and T-Helper Responses Following Genetic Immunization," <i>DNA Cell Biol.</i> , 16: 185-195, 1997.
	ASSSS	Iwasaki <i>et al.</i> , "Enhanced CTL responses mediated by plasmid DNA immunogens encoding costimulatory molecules and cytokines," <i>J. Immunol.</i> , 158: 4591-4601, 1997a.
	ATTTT	Iwasaki <i>et al.</i> , "The dominant role of bone-marrow derived cells in CTL induction following plasmid DNA immunization at different sites," <i>J. Immunol.</i> , 159: 11-14, 1997b.
	AUUUU	Jacobsen <i>et al.</i> , "Characterization of Human Immunodeficiency Virus Type 1 Mutants with Decreased Sensitivity to Proteinase Inhibitor Ro 31-8959," <i>J. Virology</i> 206:527-537 (1995).
	AVVVV	Jin <i>et al.</i> , "Dramatic Rise in Plasma Viremia after CD8 T Cell Depletion in Simian Immunodeficiency Virus-infected Macaques", <i>J. Exp. Med.</i> , 189: 991-8, 1999.

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	AWWWW	Jones <i>et al.</i> , "Poly (DL-lactide-co-glycolide)-encapsulated plasmid DNA elicits systemic and mucosal antibody responses to encoded protein after oral administration," Vaccine, 15: 814-817, 1997.
	AXXXX	Kawabata <i>et al.</i> , "The Fate of Plasmid DNA After Intravenous Injection in Mice: Involvement of Scavenger Receptors in Its Hepatic Uptake," Pharm. Res., 12: 825-830, 1995.
	AYYYY	Kent <i>et al.</i> , "Enhanced T-Cell Immunogenicity and Protective Efficacy of a Human Immunodeficiency Virus Type 1 Vaccine Regimen Consisting of Consecutive Priming with DNA and Recombinant Fowlpox Virus," J. Virol., 72: 10180-10188, 1998.
	AZZZZ	Kern <i>et al.</i> , "Target structures of the CD8(+)-T-cell response to human cytomegalovirus: the 72-kilodalton major immediate-early protein revisited," J. Virol., 73: 8179-8184, 1999.
	AAAAAA	Knapp <i>et al.</i> , "A high frequency of Mamu-A*01 in the rhesus macaque detected by polymerase chain reaction with sequence-specific primers and direct sequencing," Tissue Antigens, 50: 657-661, 1997.
	ABBBBB	Kong <i>et al.</i> , "Immunogenicity of Multiple Gene and Clade Human Immunodeficiency..." J. of Virology 77(23):12764-12772, 2003.
	ACCCCC	Korber <i>et al.</i> , "Epidemiological and Immunological Implications of the Global Variability of HIV" Retroviral Immunology, B. Walker, D. Pantaleo, Eds (The Humana Press, Totowa, NH, In press)
	ADDDDD	Kuroda <i>et al.</i> , "Analysis of Gag-specific Cytotoxic T Lymphocytes in Simian Immunodeficiency Virus-infected Rhesus Monkeys by Cell Staining with a Tetrameric Major Histocompatibility Complex Class I-Peptide Complex," J. Exp. Med., 187: 1373-1381, 1998.
	AEEEEEE	Lau <i>et al.</i> , "Cytotoxic T-cell memory without antigen", Nature, 369: 648-52, 1994.
	AFFFFFF	Letvin <i>et al.</i> , "Cytotoxic T lymphocytes specific for the simian immunodeficiency virus", Immunol. Rev., 170: 127-34, 1999.
	AGGGGG	Letvin, N.L. "Progress in the development of an HIV-1 vaccine" Science 280:1875-1880, 1998.
	AHHHHH	Letvin <i>et al.</i> , "Potent, protective anti-HIV immune responses generated by bimodal HIV envelope DNA plus protein vaccination," Proc. Natl. Acad. Sci. USA, 94: 9378-9383, 1997.
	AIIIII	Levy <i>et al.</i> , "Controlling HIV pathogenesis: the role of the noncytotoxic anti-HIV response of CD8 T cells", Immunol. Today, 17: 217-24, 1996.
	AJJJJJ	Lew <i>et al.</i> , "Cancer Gene Therapy Using Plasmid DNA: Pharmacokinetic Study of DNA Following Injection in Mice," Hum. Gene Ther., 6: 553, 1995.
	AKKKKK	Lewis, <i>et al.</i> , "Limited Protection from a Pathogenic Chimeric Simian-Human Immunodeficiency Virus Challenge following Immunization with Attenuated Simian Immunodeficiency Virus", J. Virol., 73: 1262-70, 1999.
	ALLLLL	Li <i>et al.</i> , "Infection of Cynomolgus Monkeys with a Chimeric HIV-2/SIV <sub>mac</sub> Virus That Expresses the HIV-1 Envelope Glycoproteins," J. of AIDS, 5: 639-646, 1992.
	AMMMMM	Lifson <i>et al.</i> , "The Extent of Early Viral Replication Is a Critical Determinant of the Natural History of Simian Immunodeficiency Virus Infection", J. Virol., 71: 9508-14, 1997.
	ANNNNN	Livingston <i>et al.</i> , "The Induction of Mucosal Immunity in the Female Genital Tract Using Gene-Gun Technology (Part 1: Antigen Expression)," Ann. New York Acad. Sci., 772: 265-267, 1995.
	AOOOOO	Lu <i>et al.</i> , "SIV DNA vaccine trial in macaques: post-challenge necropsy in vaccine and control groups," Vaccine 15: 920-923, 1997.

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	APPPPP	Maecker <i>et al.</i> , "DNA vaccination with cytokine fusion constructs biases the immune response to ovalbumin," Vaccine, 15: 1687-1696, 1997.
	AQQQQQ	Maecker <i>et al.</i> , "Cytotoxic T Cell Responses to DNA Vaccination: Dependence on Antigen Presentation via Class II MHC <sup>1</sup> ," J. Immunol., 161: 6532-6536, 1998.
	ARRRRR	Mahnel <i>et al.</i> , "[Experiences with immunization against orthopox viruses of humans and animals using vaccine strain MVA]," Berl. Munch Tierarztl Wochenschr, 107: 253-256, 1994. [ENGLISH TRANSLATION OF ABSTRACT ATTACHED]
	ASSSSS	Manthorpe <i>et al.</i> , "Gene Therapy by Intramuscular Injection of Plasmid DNA: Studies on Firefly Luciferase Gene Expression in Mice," Hum. Gene Therapy, 4: 419-431, 1993.
	ATTTTT	Markmeyer <i>et al.</i> , The pAX plasmids: new gene-fusion vectors for sequencing, mutagenesis and expression of proteins in E.coli," Gene 93:129-134 (1990).
	AUUUUU	Mayr <i>et al.</i> , "[The smallpox vaccination strain MVA: marker, genetic structure, experience gained with the parenteral vaccination and behavior in organisms with a debilitated defence mechanism (author's transl)]," Zentralbl. Bakteriол., 167: 375-390, 1978. [ENGLISH TRANSLATION OF ABSTRACT ATTACHED]
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<b>Information Disclosure Statement</b> <b>by Applicant</b> (Use several sheets if necessary) (37 CFR §1.98(b))		Applicant Bernard Moss et al.	
		Filing Date August 22, 2003	Group Art Unit 1645

Other Documents (include Author, Title, Date, and Place of Publication)		
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